

REMARKS

The Examiner is correct that DMD™ is a trademark of The P.O.M. Group, Inc. Accordingly, claims 1, 6, 7, 18 and 20 have been amended to further characterize the various steps associated with a closed-loop direct-metal deposition (DMD)™ process. The additional limitations provided through the inclusion of these steps also clearly distinguish over the cited prior art. Claim 10 has been canceled.

In particular, claims 1-4 were rejected under 35 U.S.C. §102(e) over Keicher et al., U.S. Patent No. 6,476,343. Although Keicher does reside in an energy beam driven rapid fabrication system, wherein an energy beam strikes a growth circuit so as to form a molten puddle into which feed powder is injected, the use of optical feedback and other aspects of Applicants' proprietary process are not disclosed or even implied. Given that a prior-art reference must teach each and every element of an invention as claimed in order to anticipate (RCA Corp. v. Applied Digital Data Systems, 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984)), rejection under §102 of the Statute is clearly precluded.

The same holds true of the rejection of claims 1-11 and 14-18 by Lewis et al. With Applicants' clarification as to the steps associated with feedback-control direct-metal deposition (DMD)™, it should be clear that anticipation is precluded here as well on the grounds that Lewis fails to teach or suggest the use of optical feedback to control a physical dimension of the material being deposited.

Referring to claims 12 and 13, the Examiner that it would have been obvious to use of a powder that increases corrosion and oxidation resistance with a reasonable expectation of success, "since corrosion and oxidation resistance are desirable quantities and articles." Apart from the fact that these claims should be deemed allowable due to the amendments made to claim 7, Applicants disagree that since corrosion and oxidation resistance area "desirable quantities and articles" that the use of a prototyping process would be an obvious choice for depositing such materials. In this regard, Applicants respectfully request that the Examiner either cite references which would convince one of ordinary skill in the art that the use of such a rapid-prototyping process would be an obvious choice for such deposition, or find the claims non-obvious for this reason as well.

Claims 19 and 20 stand rejected under 35 U.S.C. §103(a) over Lewis et al., and further in view of Singer et al. Again, while it is believed that claims 19 and 20 should be deemed independently allowable due to the amendment to the claim from which they depend, Applicants believe the combination of Lewis et al. and Singer et al. is unjustified. Singer teaches a tool used for high-pressure

die casting, and fails to disclose any method of the sort that Lewis teaches in terms of fabrication. In fact, the technique described by Singer resides in a deposition of a single steel layer (3) followed by a single copper layer (4) on a die or mold surface using a spray molten metal technique.

Claims 1-3 stand rejected under 35 U.S.C. §103(a) over Singer et al. ('830) in view of Lewis et al. ('960). As the Examiner points out, Singer teaches a tool used for high-pressure die casting, and fails to disclose the method of Lewis in terms of fabrication. In fact, the technique described by Singer resides in the deposition of a single steel layer (3) followed by a single copper layer (4) on a die or mold surface using a spray molten metal technique. Alternatively, Singer proposes metal spray deposition of alternating copper and tool steel materials followed by machining (drilling) of the cooling channels in the fabricated structure. As such, *alloying*, as well would be understood of any one of skill in the art, is simply not taught.

The Examiner goes on to assert that "it would be obvious ... to produce the tool of Singer by the process according to Lewis. By doing so, prototyping and production times are decreased." It is well settled, however, that in order to sustain an obviousness rejection there must be a reason why one having ordinary skill in the pertinent art would have been led to combine references to arrive at Applicants' claimed invention. Moreover, there must be something *in the prior art* that suggests the proposed modification, other than the hindsight gained from knowledge that the inventor choose to combine these particular things in this particular way. Uniroyal Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988). The Examiner is further required to make specific findings on a suggestion to combine prior art references. In Re Dembeczak, 175 F.3d 994, 1000-01, 50 USPQ2d 1614, 1617-19 (Fed. Cir. 1999).

In this case, there is no teaching or suggestion whatsoever in Singer et al. to use the process of Lewis, and, in fact, there *is* disclosure regarding processes *other than that disclosed by Lewis*. Furthermore, even if Singer and Lewis were combined, Applicants' claimed process would not result, given the use of feedback control used to monitor a physical characteristic of the alloy being deposited, an aspect about which both references, even in combination, are silent.

Based upon the foregoing amendments and comments, Applicants believe all pending claims are in condition for allowance. Questions regarding this application may be directed to the undersigned attorney at the telephone/facsimile numbers provided.

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